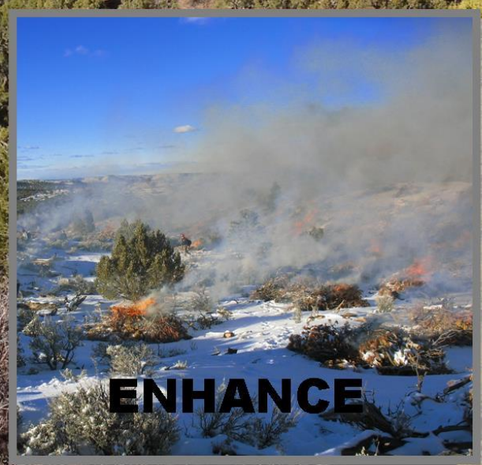
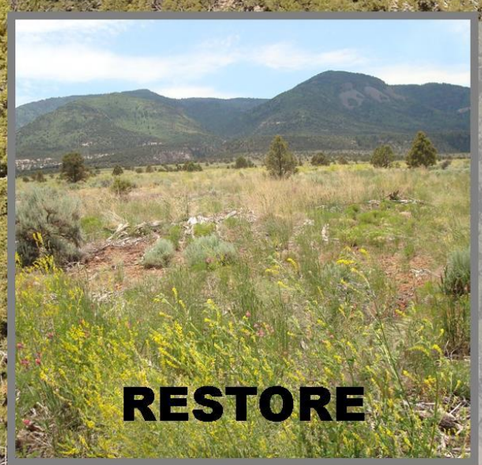
Blanding East Fuels Reduction & Watershed and Vegetation Restoration





NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Figure 1: Blanding East Project Area (Pre-treatment)

OVERVIEW

Multiple phases of the project will occur over many years, with Phase 1 (Fig. 1) planned for spring of 2016. Treatments have been planned and coordinated utilizing in-depth analysis and will be implemented to:

1. Protect against wildfires
2. Enhance wildlife habitat
3. Improve the watershed
4. Restore plant communities

Wildfire protection includes thinning dense pinyon-juniper trees adjacent to communities, next to roads, around utilities, communications sites and municipal watersheds.

Wildlife habitat enhancement includes opening up patches of young-middle aged pinyon-juniper stands to promote increased understory cover and diversity (i.e. grasses, forbs and shrubs) while leaving old growth pinyon-juniper woodlands as travel corridors for big game herds and habitat for cavity nesting birds.

Watershed improvement consists of increasing understory groundcover and reducing the amount of exposed bare soil. Improving the understory, both increases rainfall interception and reduces overland flow velocities thereby reducing splash and sheet erosion.

Plant community restoration is achieved by promoting a resilient understory through thinning pinyon-juniper, providing firewood to the community and burning piled material post-thinning.

GOALS

- Reduce the potential of wildfire damage to property and adjacent communities
- Preserve and enhance critical winter habitat, travel corridors and forage for wildlife
- Restore ecological resilience to watersheds
- Stabilize soils to reduce erosion and protect archaeological resources
- Restore and expand sage brush communities

TREATMENTS

- Thin, Pile and Burn (Fig. 2)
- Provide Firewood Gathering Opportunities to Local Communities

Figure 2: Winter Pile Burning

FIRE AND FUELS HISTORY

Over the last 80 years, the Blanding East area has experienced pinyon-juniper (P-J) encroachment, infilling and expansion, which has created a P-J dominant monoculture and caused undesirable consequences of fire regime change. This P-J dominance has been well documented and analyzed through historical photo comparisons of the area (Fig. 7). Increased vegetative competition from P-J has diminished habitat quality for wildlife through declines in forage and browse production, decreased understory diversity and habitat complexity, and increases in soil erosion with implications for long-term ecosystem sustainability.

The Vegetation Condition Class (VCC) represents a simple categorization of the vegetation departure on a landscape by analyzing how current vegetation is different from simulated historical vegetation reference conditions. P-J dominance has played a significant role in departure among vegetation groups including: ponderosa pine stands, mountain shrub, sage brush, and understory grasses and forbs. The proposed Blanding East Fuels Reduction & Watershed and Vegetation Restoration area and the surrounding lands are generally classified as VCC2 and VCC3, which indicates moderate to complete departure from historic vegetation class (Fig. 3).

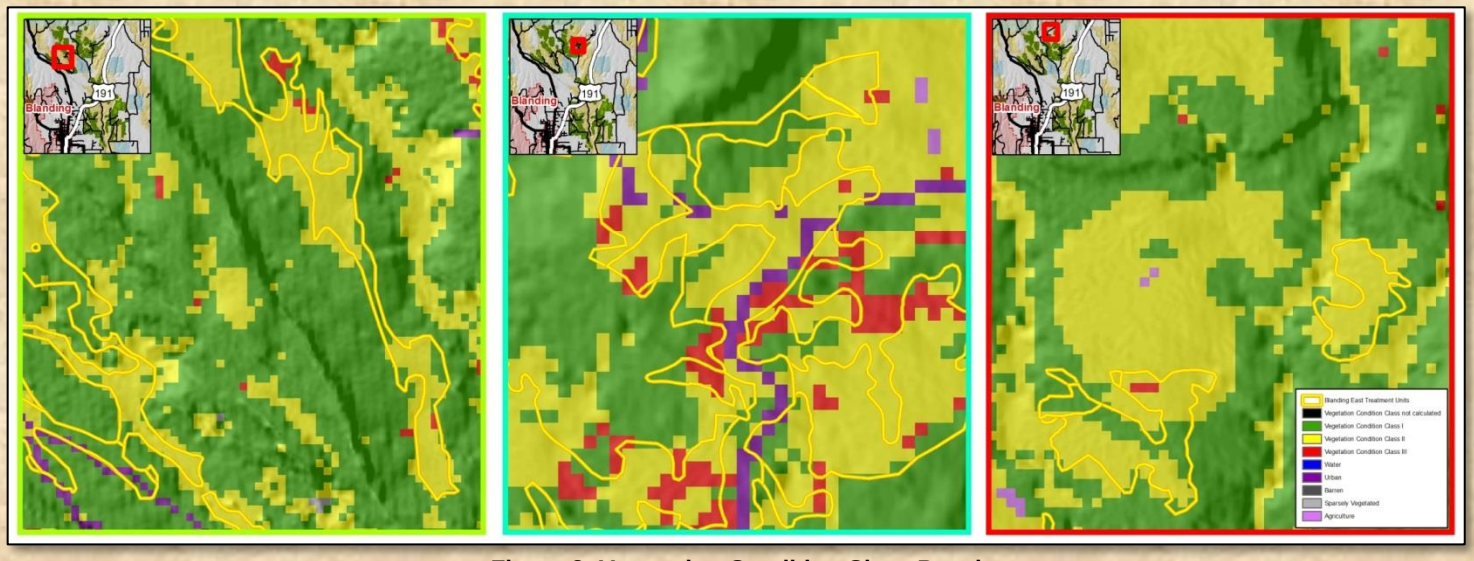


Figure 3: Vegetation Condition Class Panel

The Blanding East area experiences high fire frequency due to lightning (Figs. 4 & 6). The combination of increased fuel loads and high fire frequency increases the possibility for high-severity wildfire in the area. Increased fire size and intensity could put local communities and the municipal watershed, within the Blanding East vicinity, at risk (Figs. 4 & 6). Blanding East is a multi-phase, multi-year BLM restoration project designed to address these issues.

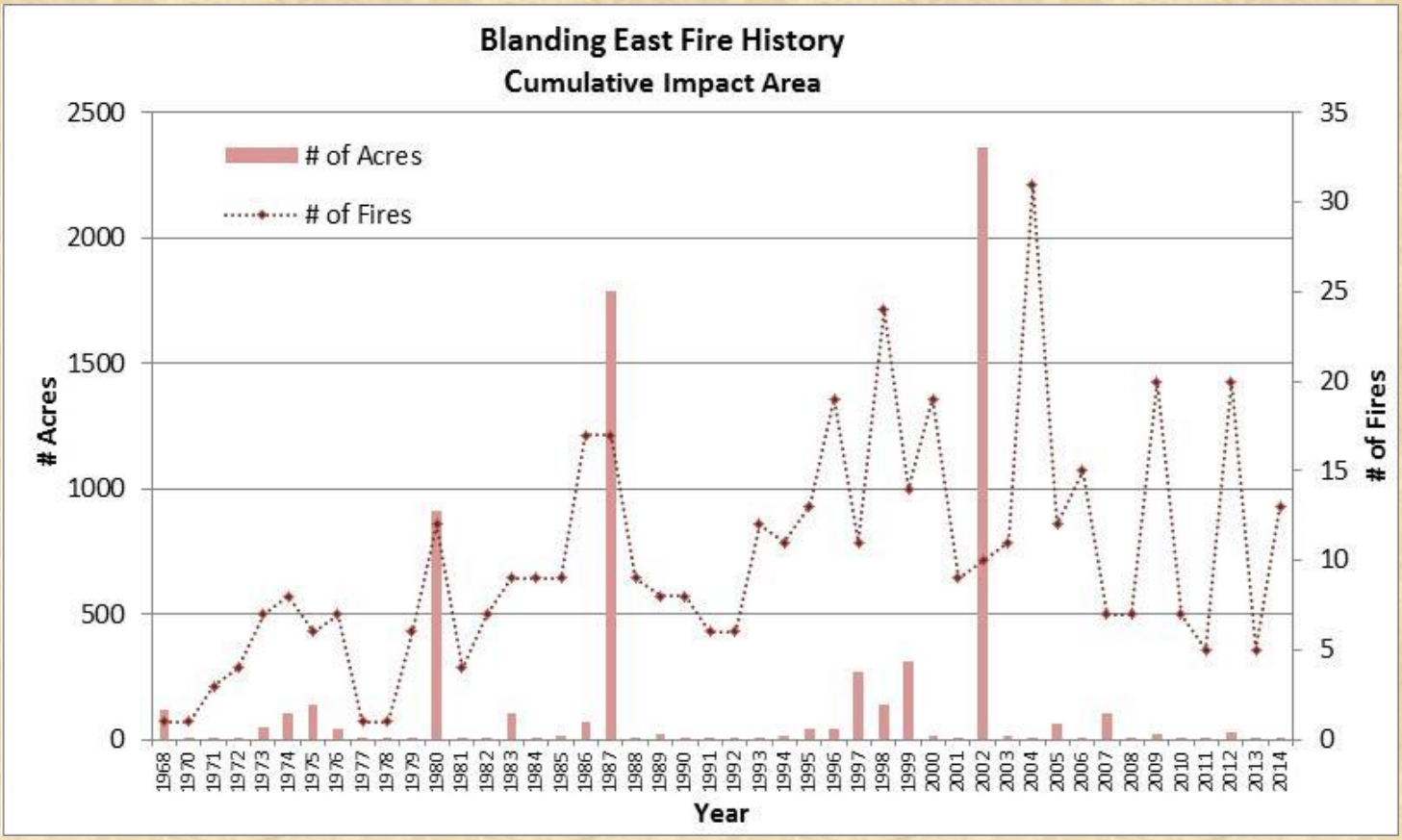


Figure 4: Blanding East fire history dating to 1968, depicting an increase in both fire occurrence and number of acres burned.

Pinyon-juniper densities and diameters were measured to inform the treatment prescription (Fig. 5, Table 1). Tree cores were also collected on a subset of trees and the growth rings were counted using a microscope. Tree ring counts were then correlated to tree diameter using a 2nd order polynomial regression (Fig. 5). Using this mathematical relationship, the tree ring counts of non-cored

trees with known diameters were predicted. Both the measured and predicted ring counts serve as a relative measure of age and help us gain a better understanding of the relative age class distribution within the project area.

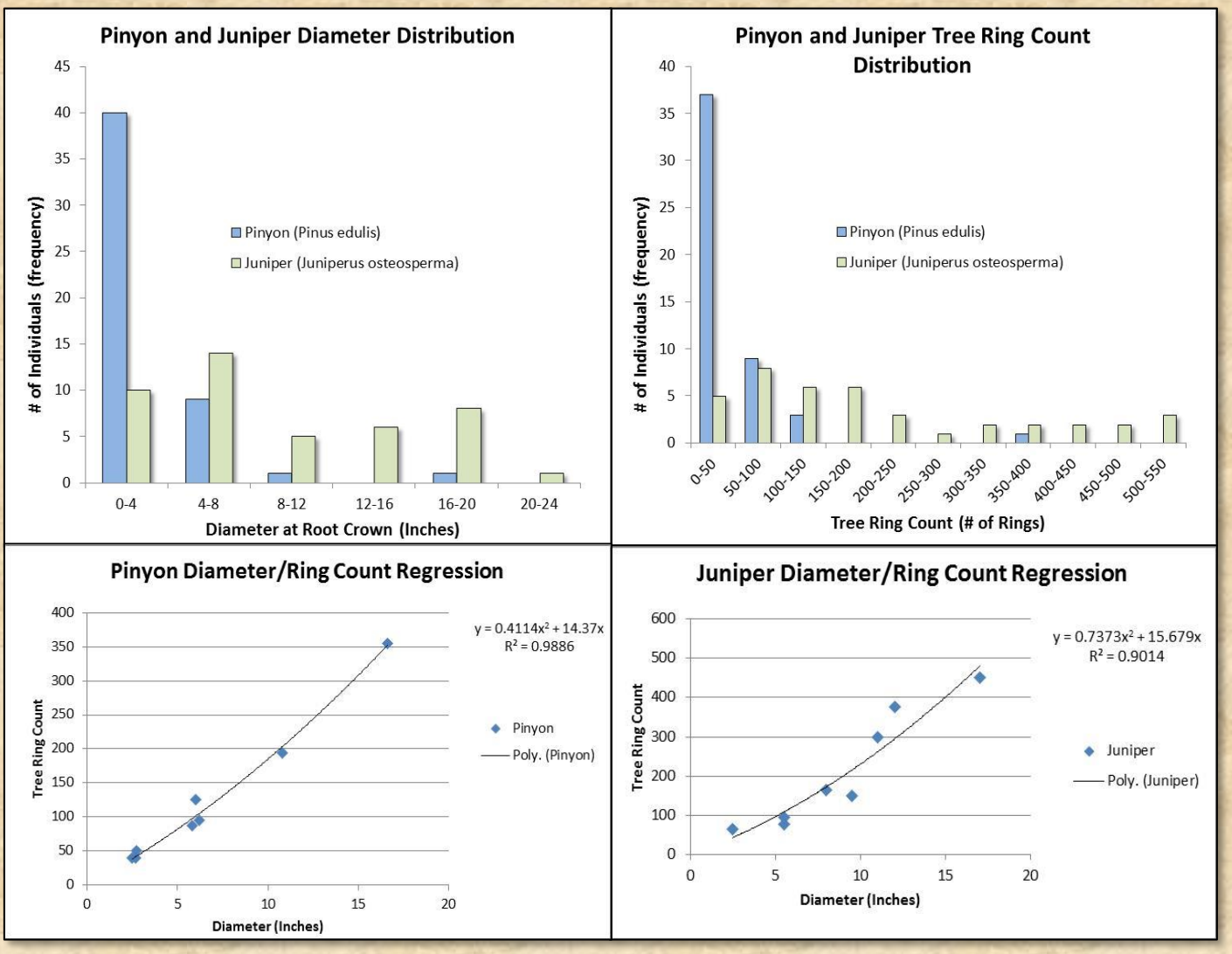


Figure 5: Pinyon-Juniper Density, Diameter and Regression Data

Table 1: Pinyon and Juniper Densities by Class.

CLASS	JUNIPER		PINYON	
	Total (Count)	Total (Trees/Acre)	Total (Count)	Total (Trees/Acre)
Adult (Dead)	3	15	1	5
Adult (Live)	36	180	25	125
Adult (Total)	**39**	**195**	**26**	**130**
Juvenile (Dead)	0	0	0	0
Juvenile (Live)	6	30	25	125
Juvenile (Total)	**6**	**30**	**25**	**125**
All Classes	**45**	**225**	**51**	**255**

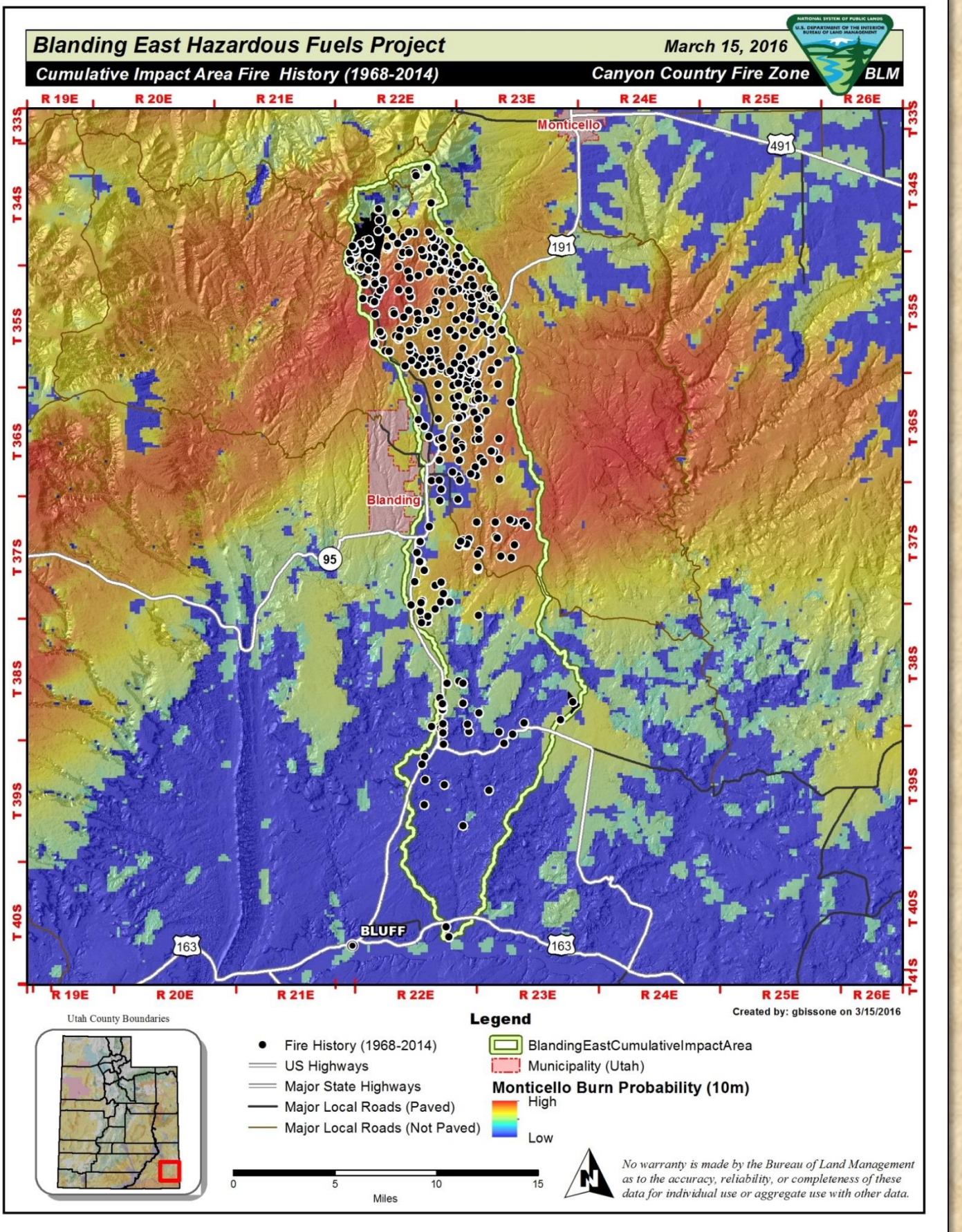


Figure 6: Map of the Blanding East project area overlaid with fire occurrence data from 1968 to 2014, along with burn probability classifications.

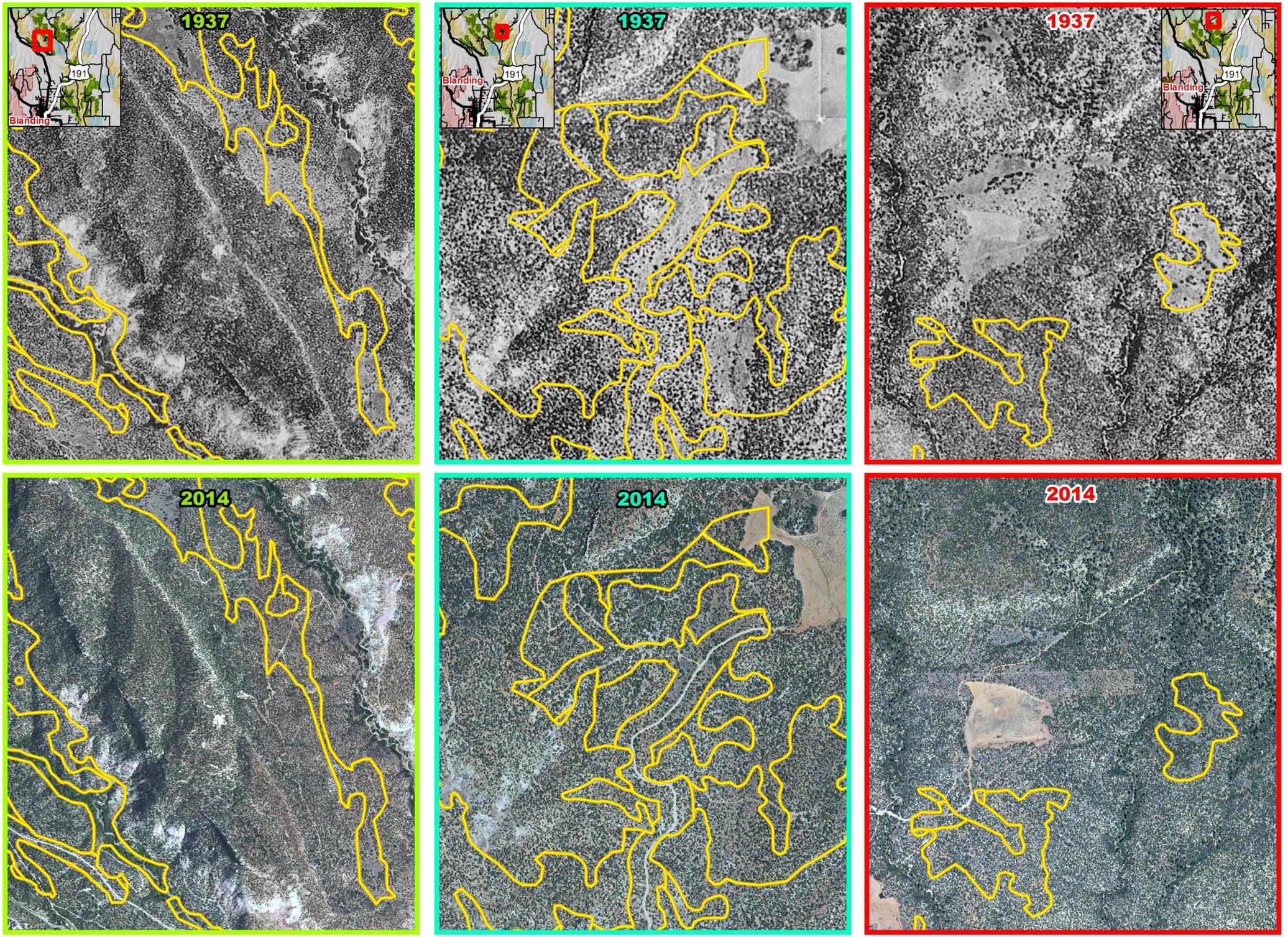


Figure 7: Historical photos within the project area depicting pinyon-juniper encroachment and infilling.

CULTURAL HISTORY

The Blanding East archaeological survey covered 4,246 acres that were mostly situated on uplands of the Recapture drainage system. The survey indicated continued use of the area during the Basketmaker II (2500 – 1500 years Before Present [BP]) through the Puebloan III (850 - 700 BP) period.

Figure 8: Basketmaker cist from approximately 1500-600 BP

Figure 9: Small arrow point of the Rose Springs style 1600-600 BP

The survey tells us prehistoric people were masters at adapting to this harsh environment for over 2000 years. Around this time, family groups only passed through the area from low to high elevations, utilizing the food resources as they came into season while also making more permanent residences to come back to in order to exploit farming opportunities, growing a little maize and squash. Bow and arrow technology arrives in the region replacing the dart thrower or atlatl (Fig. 9). The most common structure was a shallow pithouse with separate storage structures. A few small groupings of structures begin to appear where the family units would gather to trade, tell stories, and celebrate marriages.

Pottery begins to show up around 1500 years ago along with bean agriculture. Populations begin to grow as farming techniques are perfected and larger village sites composed of large pit structures begin to show up. About 1200 years ago the population proliferates

and habitation structures become multi-roomed unit pueblos with the addition of large underground pit structure commonly called kivas. These large village sites had structures built of crude masonry or jacal – mud and twig technology. Later, around 1000 years ago, the village sites get even larger, masonry becomes more refined and the typical Puebloan structures of shaped stone and mortar begin to appear. The archaeological record indicates the Blanding East area was used primarily for farming and hunting, as no large pueblo units or kivas were recorded during the survey. What does show up in the archaeological record for this time period are smaller habitation units (Fig.11), small check dams to hold water back for farming, built up terracing for farming, pottery kilns, and storage facilities are common. A few lithic quarries also occur where the raw resources needed for stone technology could be obtained.

Figure 10: Remains of a prehistoric wall from 1500 - 700 BP

Prehistoric people of the area started drifting away from these upland open sites about 700 years ago with populations moving to

more secluded and safer areas within cliff lines. The changing climate resulted in poor crop productions that led families to search out more protected and precarious areas to live, protect their families, and store their food. A few of these small cliff dwellings and granaries occur just outside the project area (Fig. 12).

The area was abandoned by prehistoric people around 500 years ago, but within a few hundred years after this abandonment, the descendants of the modern Ute, Piute, and Navajo begin to arrive from the west and north. These new arrivials left little behind to show their passing, small sweat lodges, a few hogans, small arrow points, and some pottery, but not much else.

European arrival in the late 1800's is marked by small cabin sites, agricultural canals and roads, trash dumps, mining operations, and water storage facilities. Cattle and sheep ranching first appeared along with limited farming, then the exploitation of natural resources such as timber, uranium and other minerals began. Today, livestock grazing and tourism are the two most popular uses of this area.

Figure 11: Remains of a prehistoric dwelling from 1500 - 700 BP

COLLABORATION

- The Utah Division of Forestry, Fire and State Lands and Blanding community members identified this area for immediate treatment through the community wildfire protection planning (CWPP) process.

- The San Juan County plan specifically recommends treatment of these type of areas and county commisioners were consulted during the project planning process.

- Public and consulting party meetings were held which helped shape treatment methods and identify locations to enhance specific resource protections such as wildlife and archaelogical values.

- Participation for project design and funding is a collaborative effort between the BLM and the Utah Watershed Restoration Initiative.

ACHIEVEMENTS

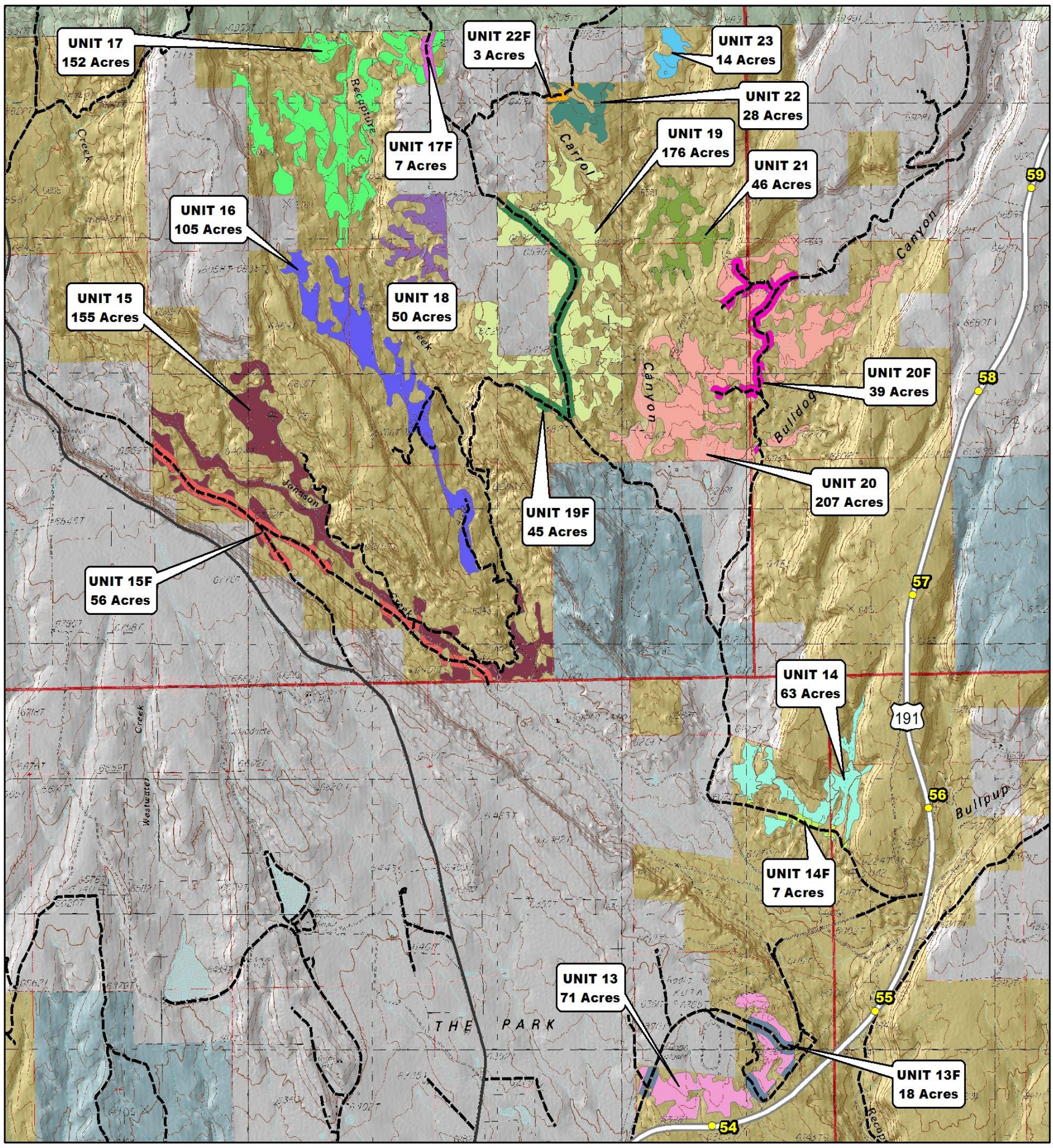
- As P-J encroachment, expansion and infilling is reduced in sage and ponderosa populations; the risk of high-severity wildfires will diminish for adjacent communities, lands and infrastructure.
- The Blanding East project (Fig. 13) is a product of partner collaboration to ensure the application of contemporary scientific research for the unification of best land management practices.

Blanding East Fuels Project - Phase I

October 16, 2015

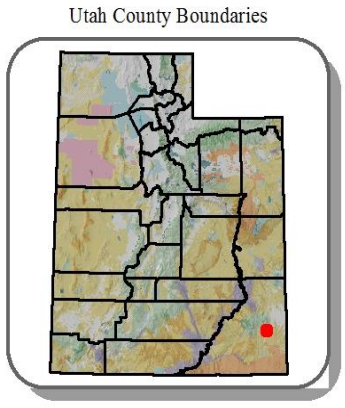
Hand Pile (1,067 Acres) & Hand Pile Firewood (176 Acres)

Canyon Country Fire Zone BLM



Created by: gbissone on 10/16/2015

Utah County Boundaries



- Fire Wood, UNIT 13F
- Fire Wood, UNIT 14F
- Fire Wood, UNIT 15F
- Fire Wood, UNIT 17F
- Fire Wood, UNIT 19F
- Fire Wood, UNIT 20F
- Fire Wood, UNIT 22F
- Hand Pile, UNIT 13
- Hand Pile, UNIT 14
- Hand Pile, UNIT 15
- Hand Pile, UNIT 16
- Hand Pile, UNIT 17
- Hand Pile, UNIT 18
- Hand Pile, UNIT 19
- Hand Pile, UNIT 20
- Hand Pile, UNIT 21
- Hand Pile, UNIT 22
- Hand Pile, UNIT 23
- Mileposts
- US Highways
- Major Local Roads, Paved
- Rural Road (Dirt)
- Township, Range and Section
- County Boundary
- Wilderness Study Areas
- Bureau of Land Management
- Private (White)
- State
- US Forest Service (USFS)

0 0.25 0.5 0.75 1 Miles

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 12: Blanding East Treatment Units.

WWW.UtahFireInfo.gov

For more info and other on-going projects

BLM, Canyon Country Fire Zone, Monticello Field Office